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Descriptions of some new forms of *Pseudolucanus capreolus*. (Coleoptera: Lucanidae).

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PSEUDOLUCANUS CAPREOLUS (L.).

1764. *Scarabacus capreolus* L., Museum Ludovicae Ulricaе, p. 32.

A recent examination of some preserved specimens of our common stag beetle, *Pseudolucanus capreolus* (L.), disclosed two examples which are worthy of record. Taken in company with 120 others having typical mandibular characters, on my annual trips in 1935 and 1936 to Deer Lodge, Morgan County, Tennessee, they were believed, at the moment of discovery, to be a hitherto undescribed form or perhaps a new species. To settle this question to my satisfaction, the specimens were sent to Dr. E. A. Chapin, Curator of Insects, U. S. National Museum, for inspection, who, on returning the two examples, submitted additional material for reference from the National Collection, recommending their description. I am under deep obligation to Dr. Chapin, for the kindly loan of the material in the National Collection, and thank him heartily for the opportunity to figure and describe the possible variations which we may encounter in our stag beetles.

All the examples, that is, the two males in my own cabinet and four males from the National Collection, are of intermediate size, ranging from 19.75 to 23.5 millimeters. In comparison with a magnificent male of 39 mm., the six forms appear to be mere dwarfs. They differ to a great extent in mandibular dentition; the typical male is designated as Form *A*, and there is even an edentate phase, which is, however, not the smallest individual as could be surmised, but compares favorably as to size with the other multidentate forms, which, it appears, are relatively uncommon in occurrence.

As is well known, the constant form of this species is equipped with symmetrical mandibles, esplanate dorsally, armed internally with a single obtuse, slightly subdorsal tooth, the position of which varies from the apical third to the middle of the mandible. In the specimens before me, these subdorsal teeth are not so well developed, being represented by a simple conical denticle, or, in one instance entirely lacking. For convenience, the subdorsal tooth is called *upper*, and the additional teeth noted, *lower*; they vary in size and position, as indicated in the subjoined descriptions.

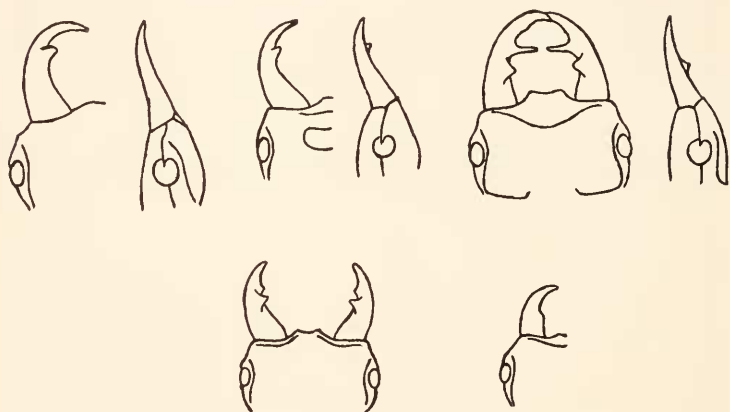


Fig. 1

Fig. 2
Fig. 4Fig. 3
Fig. 5

Forms of *Pseudolucanus capreolus* (L.). Fig. 1, Form A, typical; 2, *nigricephalus* ab. nov.; 3, Form C; 4, Form D; 5, Form *muticus* (Thunberg.).

FORM A. FIG. 1.

Typical male of the largest development in my possession, purposely selected for illustration, measures 39 mm. with mandibles. Dark chestnut, shining. Mandibles strongly incurved, esplanate dorsally, with a distinct subdorsal (*upper*) tooth, not visible when viewed from the side (fig. 1).

NO(RTHERN) ILL(INOIS). 22-VI-30. Collected by B. Benesh, near Libertyville, in a deciduous forest with beeches predominating, at dusk. Accession No. 649.

PSEUDOLUCANUS CAPREOLUS nigricephalus ab. nov. FIG. 2.

A distinct new form, readily distinguishable by its coloration and nearly erect mandibular subdorsal tooth, readily seen when viewed laterally; 34 mm. long, highly polished, shining. Head and pronotum entirely black, the latter becoming gradually lighter in shade towards the base, where it matches the dark chocolate-brown elytra. Head nearly destitute of the semi-circular occipital carinae present in Form *A*, sloping gently from the vertex to front, with a frontal, transverse kidney-shaped depression, between and on line with the eyes. Mandibles not so strongly curved at apex as in the preceding form, more cylindrical, with the subdorsal tooth more elevated, and exposed to view from the side (fig. 2). Venter and legs distinctly concolorous (dark chestnut).

Type: 1 ♂ No (rthern) ILL(INOIS). 10-VI-28. Taken at Beach (now Dunes Park) by the writer and in his collection No. 653. Another example of this distinct aberrant is preserved in the collection of Mr. J. W. Angell, New York, which I have had the privilege to examine during my brief visit to that metropolis in 1932.

FORM C. FIG. 3.

Multidentate, cherry-red, 23.25 mm. long. Mandibles symmetrical, uniformly curved from base to apex, cylindrical, more coarsely punctuate than in the preceding two forms. Subdorsal (upper) tooth indicated by a conical denticle and, anterior to this, a lateral (slightly lower) acute prong pointing at a right angle inwards (fig. 3). Legs reddish-yellow.

Type: 1 ♂, Deer Lodge, TENNESSEE, June 1936. B. Benesh, collector and in his collection No. 4346.

FORM D. FIG. 4.

Multidentate, dark chocolate-brown (possibly discolored in the preserving fluid), 22.5 mm. long. Mandibles symmetrical, with the upper tooth present as a conical tubercle which is bigger than the lower and feebly indicated anterior tooth (fig. 4). Legs obscurely reddish.

Type: 1 ♂, Deer Lodge, TENNESSEE, June 1935. B. Benesh, collector and in his cabinet No. 4347.

FORM E.

Similar to preceding form, 23.5 mm. long. Both the acute lower and the blunt upper tooth are present, one above the

other, as very feebly developed protuberances.

Type: 1 ♂, Mt. Airy, P(ENNSYLVANIA). Coll. P. Laurent, Geo. M. Greene collection, U. S. N. M.

FORM F.

Each mandible has the acute lower tooth as a small denticle; basally from this tooth a second not so well developed; blunt upper tooth lacking on both mandibles. Length 20 mm.

Type: 1 ♂, Nashville, TENN(ESSEE), 11-23, Osborn. Wickham Collection 1933, U. S. N. M.

FORM G.

Left mandible with an acute lower tooth moderately well developed, the right mandible with the acute lower tooth developed only as a small denticle, the normal blunt upper tooth lacking on both. 19.75 mm. long.

Type: 1 ♂, Gipsy Moth Lab., July 8, 1910. At arc lights. Wilmington, MASS(ACHUSETTS). 1910. U. S. N. M.

PSEUDOLUCANUS CAPREOLUS form MUTICUS (Thunb.). FIG. 5.

Edentate form, to which Thunberg¹ applied the name *muticus*, 23 mm. long, fig. 5. Mandibles nearly straight for two-thirds their length, thence gently curved to apex; broad to about the middle, suddenly tapered to a point; no trace of either tooth on either mandible.

1 ♂, Plummers Island, M(ARYLAND)D. 1. 7. 19. Schwarz and Barber Collection. U. S. N. M. Several others, not as yet pinned, from Deer Lodge, Tenn., in the writer's possession.

It is interesting to note that, out of the five multidentate specimens, three are from the State of Tennessee. In some quarters, especially continental Europe, these would be considered as "Uebergänge," "Brücken" or "Geographische Rassen." However, this interpretation is unacceptable, in view of the two specimens taken at some distance from Tennessee, i. e., in Massachusetts and Pennsylvania. These specimens lend support to my statement² that certain forms, thus far described as subspecies or regional races, will, at some time, be taken throughout the range of a species and lead us to deny to these so-called subspecies or geographical races the status bestowed upon them.

¹ THUNBERG, C. P. Lucani Monographia, Mem. Soc. Nat., Moscow, I. p. 198 (1806).

² BENESH, B. Some notes on Boreal American Dorcinae. Trans. Amer. Ent. Soc. LXIII, p. 14 (1937).